WHAT IS CLAIMED IS:

1. A process for the production of a double-side metal-foil-clad laminate for a semiconductor plastic package structured by disposing a metal sheet of nearly the same size as a printed circuit board nearly in the center in the thickness direction of the printed circuit board, providing at least one exposed metal sheet protrusion of nearly the same size as a semiconductor chip on one surface of the printed circuit board, fixing the semiconductor chip thereon, connecting the semiconductor chip to a signal propagation circuit conductor formed on a printed circuit board surface in the vicinity thereof by wire bonding, at least connecting the signal propagation circuit conductor on the printed circuit board surface to a signal propagation circuit conductor formed on the other surface of the printed circuit board or a connecting conductor pad of a solder ball with a through-hole conductor, and encapsulating the semiconductor chip with a resin,

the process comprising the steps of

(1) forming a protrusion on one surface of the metal sheet for mounting the semiconductor chip, and forming a clearance hole having a diameter greater than the diameter of a through-hole or a slit whose minor side is greater than the diameter of the through-hole for providing the through-hole for the conduction of front and reverse circuit conductors,

(2) disposing a low-flow or no-flow prepreg sheet or resin layer having a hole slightly greater than the area of the protrusion portion on the protrusion position on the side where the metal protrusion portion is formed, disposing a high-flow prepreg sheet or resin layer having a resin amount and a resin flow for being sufficiently filled in the clearance hole on the other side, and disposing metal foils or single-side metal-foil-clad laminates on both outer sides thereof, and

(3) laminate-forming the resultant set under heat and under pressure, to integrate it and form a metal-sheet-inserted dual-side metal-foil-clad laminate.

2. A process according to claim 1, wherein the laminate-formation is carried out under vacuum.

3. A process according to claim 1, wherein the through-hole includes a through-hole insulated from the metal sheet with a heat-resistant resin composition and a through-hole directly connected to the metal sheet.

4. A process according to claim 1, wherein a heat-diffusing via hole is made in the reverse surface so as to connect to the metal sheet and is plated with a metal.

5. A process according to claim 1, wherein the protrusion is formed on one surface of the metal sheet, and the clearance hole is made, by the following steps of,

(1) forming an etching resist on the metal sheet surface,

(2) forming the protrusion for the semiconductor chip on one surface by etching,

(3) applying a liquid etching resist to the entire surface of the metal sheet, drying a coating of the etching resist to remove a solvent, covering a negative film having a hole made by punching for the metal extrusion portion on the metal sheet surface, and carrying out irradiation with ultraviolet light, and

(4) dissolving and removing unexposed resist in the clearance hole portion with a 1 % sodium carbonate aqueous solution, forming the clearance hole by etching on both sides and removing the etching resist.

6. A process according to claim 1, wherein the step (2) is the step of

(2') disposing a low-flow or no-flow prepreg sheet, a resin sheet or a coated resin layer having a hole slightly greater than the area of the protrusion portion on the protrusion position on the side where the metal protrusion portion is formed, further

disposing a dual-side sheet or multi-layer sheet which has a hole slightly greater than the area of the metal protrusion portion, has a circuit on one surface and is chemically surface-treated as required thereon, disposing a high-flow prepreg sheet, a copper foil with a resin, a resin sheet or an application-formed resin layer having a resin amount and a resin flow for being sufficiently filled in the clearance hole on the other side, and, when the outside thereof is a resin layer, disposing a metal foil or a single-side metal-foil-clad laminate.

7. A process according to claim 1, wherein the step (1) is the steps of

(1') disposing an etching resist for forming the protrusion on part of one surface of the metal sheet, disposing an etching resist for forming the clearance hole or the slit on the other surface, and at the etching step, blowing an etching solution having a lower pressure on the surface where the protrusion is to be formed and blowing an etching solution having a higher pressure on the other surface, to form the protrusion portion and the clearance hole or the slit together.

8. A process according to claim 1, wherein the step (1) is the step of

(1') the protrusion for mounting a semiconductor chip is formed on one surface of the metal sheet by embossing the metal sheet, to form a structure in which one surface is protruded and the other surface is dented.

9. A process according to claim 1, wherein the metal sheet and the metal for the circuit on the front surface are an alloy having a copper content of at least 95 % or pure copper.

10. A process according to claim 1, wherein the resin composition for forming the prepreg sheet or the resin layer is a thermosetting resin composition containing a polyfunctional cyanate ester or a prepolymer of said cyanate ester.

11. A process according to claim 1, wherein the step (1) includes the step of forming the protrusion portion which is nearly of the same size as the semiconductor chip on one surface of the metal sheet and forming a protrusion portion on a portion corresponding to part or the whole of a marginal portion of the printed circuit board, the above step is the step of

(1') covering the entire surface of the metal sheet with a liquid etching resist, then curing the resist on the protrusion portion on which the semiconductor chip is to be mounted and the protrusion portion for heat diffusion on the marginal portion by exposure, removing an unexposed portion by dissolving, dissolving a predetermined thickness of the metal sheet by etching, and then removing the etching resist by dissolving.